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09/881,505	06/14/2001	Bipul Binit Sinha	oracle01.016	7778

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 06/08/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/881,505

Applicant(s)

SINHA ET AL.

Examiner

Etienne P LeRoux

Art Unit

2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2, 4-6, 8, 10-23, 25-27 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 6,088,694 issued to Burns et al (hereafter Burns).

Claim 11:

Burns discloses a method of ensuring that a first component of a distributed system that exchanges messages belonging to a transaction with one or more other components of the distributed system is additionally aware of a state of an other component, the state being is relevant to a protocol employed with the transaction and the method comprising the steps practiced in the first component of:

- receiving an augmented one of the messages, the augmented message having been augmented by the other component to additionally contain information indicating the relevant state of the other component [Fig 4, read-only flag in the command, col 9, lines 59-65]
- retaining the relevant state from the augmented message; and using the retained relevant state to optimize the protocol [col 9, line 65 – col 10, line 4]

Claim 2:

Burns discloses the protocol ensures that the results of the transaction are consistent in the components and in the step of receiving an augmented one of the messages, the information

Art Unit: 2171

indicating the relevant state indicates whether the transaction will modify data in the other component [col 9, line 59 – col 10 line 4].

Claim 4:

Burns discloses the distributed system is a distributed database system and the components are database systems therein [Fig 4]

Claim 5:

Burns discloses a method of ensuring that a first component of a distributed system that exchanges messages that belong to a protocol for a transaction with one or more other components of the distributed system is additionally aware of a state of an other component, the state being relevant to the protocol and the method comprising the steps practiced in the other component of determining the relevant state [col 9, line 65 – col 10, line 4] and augmenting a message sent according to the protocol with state information indicating the relevant state of the other component the first component using the state information to optimize the protocol [Fig 4, read-only flag in the command, col 9, lines 59-65].

Claim 6:

Burns discloses the relevant state indicates whether the transaction will modify data in the other component [Fig 4, col 9, line 59 – col 10, line 5]

Claim 8:

Burns discloses the distributed system is a distributed database system and the components are database systems therein [Fig 4]

Claim 10:

Burns discloses a method of executing a two-phase commit protocol for a transaction, the transaction involving a coordinator and a cohort and the method comprising the steps performed in the cohort of: augmenting a message that the cohort sends to the coordinator as part of the

Art Unit: 2171

transaction with state information indicating whether the transaction will modify the cohort [Fig 4, read-only flag in command, col 9, lines 59-65], and responding to messages received from the coordinator as required by the commit protocol, the coordinator sending a message of the commit protocol to the cohort as determined by the state information [col 9, line 65 – col 10, and col 10, line 61 – col 11, line 9]

Claim 12:

Burns discloses the data storage device contains code which, when executed by a processor performs the method of claim 11 [Fig 4]

Claim 13:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 2 [Fig 4]

Claim 14:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 3 [Fig 4] .

Claim 15:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 4 [Fig 4]

Claim 16:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 5 [Fig 4].

Claim 17:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 6 [Fig 4].

Art Unit: 2171

Claim 18:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 7 [Fig 4].

Claim 19:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 8 [Fig 4].

Claim 20:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 9 [Fig 4].

Claim 21:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 10 [Fig 4].

Claim 22:

Burns discloses a coordinator in a distributed system that coordinates a protocol employed with a transaction that exchanges messages with one or more other components of the distributed system, the coordinator having the improvement comprising: retained state information that retains state of an other component that is relevant to the protocol, the coordinator receiving a message of the protocol from the other component which has been augmented with the state information [Fig 4, read-only flag in the command, col 9, lines 59-65] retaining the state information from the augmented message in the retained state information, and using the retained state information to optimize the protocol [col 9, line 65 – col 10, line 4 and col 10, line 10, line 61 – col 11, line 9]

Claim 23:

Burns discloses the protocol ensures that the results of the transaction are consistent in the components; and the retained state information for the other component indicates whether the transaction will modify data in the other component [col 9, line 65 – col 10, line 4]

Claim 25:

Burns discloses wherein the distributed system is a distributed database system and the coordinator and the other component are database systems therein [Fig 4]

Claim 26:

Burns discloses a cohort in a distributed system, the cohort being involved in a transaction which employs a protocol that is coordinated by a coordinator and exchanging messages of the transaction with the coordinator, the cohort having the improvement comprising: a message of the protocol that is augmented with state information indicating a state of the cohort which is relevant to the protocol [Fig 4, read-only flag in the command, col 9, lines 59-65], the cohort sending the message to the coordinator and the coordinator retaining the state information and using the retained state information to optimize the protocol [col 9, line 65 – col 10, line 4 and col 10, line 10, line 61 – col 11, line 9]

Claim 27:

Burns discloses the protocol ensures that the results of the transaction are consistent in the components; and the state information in the augmented message indicates whether the transaction will modify data in the cohort [col 9, line 59 - col 10, line 4]

Claim 29:

Burns discloses the distributed system is a distributed database system and the cohort and coordinator are database systems therein [Fig 4].

Art Unit: 2171

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7, 9, 24, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns in view of US Pat No 5,335,343 issued to Lampson et al (hereafter Lampson).

Claims 3, 7, 24 and 28:

Burns discloses the elements of claims 11, 2, 5, 6, 22, 23, 26 and 27 as noted above.

Burns fails to disclose the protocol is a two-phase commit protocol, the first component is the coordinator for the protocol, and in the step of using the retained relevant state to optimize the protocol the first component sends a message that aborts the transaction to an other component when the other component's state indicates that the transaction does not modify the data in the other component.

Lampson discloses the protocol is a two-phase commit protocol, the first component is the coordinator for the protocol, and in the step of using the retained relevant state to optimize the protocol the first component sends a message that aborts the transaction to an other component when the other component's state indicates that the transaction does not modify the data in the other component [Figs 7 and 8 and col 6, lines 25-40].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include the protocol is a two-phase commit protocol, the first component is the coordinator for the protocol, and in the step of using the retained relevant state to optimize the protocol the first component sends a message that aborts the transaction to an

Art Unit: 2171

other component when the other component's state indicates that the transaction does not modify the data in the other component as taught by Lampson.

The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Claim 9:

Burns discloses a method of executing a two-phase commit protocol for a transaction, the transaction involving a coordinator and a cohort and the method comprising the performed in the coordinator of receiving a message of the protocol from the cohort, the message being augmented with state information indicating whether the transaction modifies the cohort's data, retaining the state information for the cohort [Fig 4, read-only flag in the command, col 9, lines 59-65, col 9, line 65 – col 10, line 4]

Burns fails to disclose if the state information for the cohort indicates that the transaction does not modify the cohort, sending an abort message of the two-phase commit to the cohort

Lampson discloses if the state information for the cohort indicates that the transaction does not modify the cohort, sending an abort message of the two-phase commit to the cohort [Figs 7 and 8 and col 6, lines 25-40]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include if the state information for the cohort indicates that the transaction does not modify the cohort, sending an abort message of the two-phase commit to the cohort as taught by Lampson.

The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Art Unit: 2171

Claim 30:

Burns discloses a coordinator in a distributed system that coordinates a two-phase commit protocol employed with a transaction that involves one or more cohorts in the distributed system, the coordinator having the improvement comprising: retained state information that retains state of a cohort, the state indicating whether the transaction will modify the cohort's data, the coordinator receiving a message of the protocol from the cohort which has been augmented with the state information, retaining the state information from the augmented message in the retained state information [Fig 4, read-only flag in the command, col 9, lines 59-65, col 9, line 65 – col 10, line 4].

Burns fails to disclose if the retained state information for the cohort indicates that the transaction does not modify the cohort's data, sending an abort message of the two-phase commit protocol to the cohort.

Lampson discloses if the retained state information for the cohort indicates that the transaction does not modify the cohort's data, sending an abort message of the two-phase commit protocol to the cohort [Figs 7 and 8 and col 6, lines 25-40].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include if the retained state information for the cohort indicates that the transaction does not modify the cohort's data, sending an abort message of the two-phase commit protocol to the cohort as taught by Lampson.

The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Art Unit: 2171

Claim 31:

Burns discloses a cohort in a distributed system in which a coordinator in the distributed system coordinates a two-phase commit protocol employed with a transaction that involves the cohort, the cohort having the improvement comprising: a message of the protocol that is augmented with state information indicating whether the transaction will modify the cohort's data, the cohort sending the message to the coordinator and the coordinator retaining the state information [Fig 4, read-only flag in the command, col 9, lines 59-65, col 9, line 65 – col 10, line 4 and col 10, line 10, line 61 – col 11, line 9]

Burns fails to disclose if the retained state information for the cohort indicates that the transaction does not modify the cohort's data sending an abort message of the two-phase commit protocol to the cohort

Lampson discloses if the retained state information for the cohort indicates that the transaction does not modify the cohort's data sending an abort message of the two-phase commit protocol to the cohort [Figs 7 and 8 and col 6, lines 25-40]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include if the retained state information for the cohort indicates that the transaction does not modify the cohort's data sending an abort message of the two-phase commit protocol to the cohort as taught by Lampson.

The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Art Unit: 2171

Response to Arguments

Applicant's arguments filed 5/3/2004 have been fully considered and are partially persuasive. However, to advance prosecution by eliminating unnecessary arguments, supra new art rejection is made. Examiner introduces new prior art, i.e., Burns for the teaching of an augmented message. Examiner retains Lampson for the disclosure of an abort step in the process of two-phase commit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Etienne LeRoux

6/4/2004

